ABSTRACT OF THE DISCLOSURE

Techniques for implementing a digital signature algorithm in electronic computer hardware include computing the multiplicative inverse of a particular integer modulo a prime modulus by computing a first quantity modulo the prime modulus. The first quantity substantially equals, modulo the prime modulus, the particular integer raised to a power of a second quantity. The second quantity is two less than the prime modulus. The techniques allow an integrated circuit block to compute a modulo multiplicative inverse, such as for signing and verifying digital signatures, using existing blocks of circuitry that consume considerably less area on a chip, and incur fewer developmental costs, than an implementation of an algorithm conventionally used in software.